Figure 1

Sequence ID 1: human interferon alpha 1 (GenBank 13128950)

MASPFALLMVLVVLSCKSSCSLGCDLPETHSLDNRRTLMLLAQMSRISPSSCLMDRHDFGF PQEEFDGNQFQKAPAISVLHELIQQIFNLFTTKDSSAAWDEDLLDKFCTELYQQLNDLEACV MQEERVGETPLMNADSILAVKKYFRRITLYLTEKKYSPCAWEVVRAEIMRSLSLSTNLQERL RRKE

Sequence ID 2: human interferon alpha-2a (GenBank 2781226)

CDLPQTHSLGSRRTLMLLAQMRKISLFSCLKDRHDFGFPQEEFGNQFQKAETIPVLHEMIQ QIFNLFSTKDSSAAWDETLLDKFYTELYQQLNDLEACVIQGVGVTETPLMKEDSILAVRKYF QRITLYLKEKKYSPCAWEVVRAEIMRSFSLSTNLQESLRSKE

Sequence ID 3: human interferon alpha-2b (GenBank 30171279)

MCDLPQTHSLGSRRTLMLLAQMRRISLFSCLKDRHDFGFPQEEFGNQFQKAETIPVLHEMI QQIFNLFSTKDSSAAWDETLLDKFYTELYQQLNDLEACVIQGVGVTETPLMKEDSILAVRKY FQRITLYLKEKKYSPCAWEVVRAEIMRSFSLSTNLQESLRSKE

Sequence ID 4: human interferon alpha 4 (GenBank 10835103)

MALSFSLLMAVLVLSYKSICSLGCDLPQTHSLGNRRALILLAQMGRISHFSCLKDRHDFGFP EEEFDGHQFQKAQAISVLHEMIQQTFNLFSTEDSSAAWEQSLLEKFSTELYQQLNDLEACVI QEVGVEETPLMNEDSILAVRKYFQRITLYLTEKKYSPCAWEVVRAEIMRSLSFSTNLQKRLR RKD

Sequence ID 5: human interferon alpha 5 (GenBank 4504597)

MALPFVLLMALVVLNCKSICSLGCDLPQTHSLSNRRTLMIMAQMGRISPFSCLKDRHDFGFP QEEFDGNQFQKAQAISVLHEMIQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLEACM MQEVGVEDTPLMNVDSILTVRKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSANLQERL RRKE

Sequence ID 6: human interferon alpha 6 (GenBank 11128015)

MALPFALLMALVVLSCKSSCSLDCDLPQTHSLGHRRTMMLLAQMRRISLFSCLKDRHDFRF PQEEFDGNQFQKAEAISVLHEVIQQTFNLFSTKDSSVAWDERLLDKLYTELYQQLNDLEAC VMQEVWVGGTPLMNEDSILAVRKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSSSRNLQE RLRRKE

Sequence ID 7: human interferon alpha 7 (GenBank 10800142)

MARSFSLLMAVLVLSYKSICSLGCDLPQTHSLRNRRALILLAQMGRISPFSCLKDRHEFRFP EEEFDGHQFQKTQAISVLHEMIQQTFNLFSTEDSSAAWEQSLLEKFSTELYQQLNDLEACVI QEVGVEETPLMNEDFILAVRKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSFSTNLKKGLR RKD

Sequence ID 8: human interferon alpha 8 (GenBank 4504599)

MALTFYLMVALVVLSYKSFSSLGCDLPQTHSLGNRRALILLAQMRRISPFSCLKDRHDFEFP QEEFDDKQFQKAQAISVLHEMIQQTFNLFSTKDSSAALDETLLDEFYIELDQQLNDLEVLCD QEVGVIESPLMYEDSILAVRKYFQRITLYLTEKKYSSCAWEVVRAEIMRSFSLSINLQKRLKS KE

Sequence ID 9: human interferon alpha 10 (GenBank 4504589)

MALSFSLLMAVLVLSYKSICSLGCDLPQTHSLGNRRALILLGQMGRISPFSCLKDRHDFRIPQ EEFDGNQFQKAQAISVLHEMIQQTFNLFSTEDSSAAWEQSLLEKFSTELYQQLNDLEACVIQ EVGVEETPLMNEDSILAVRKYFQRITLYLIERKYSPCAWEVVRAEIMRSLSFSTNLQKRLRRK D

Sequence ID 10: human interferon alpha 13 (GenBank 13128966)

MASPFALLMALVVLSCKSSCSLGCDLPETHSLDNRRTLMLLAQMSRISPSSCLMDRHDFGF PQEEFDGNQFQKAPAISVLHELIQQIFNLFTTKDSSAAWDEDLLDKFCTELYQQLNDLEACV MQEERVGETPLMNADSILAVKKYFRRITLYLTEKKYSPCAWEVVRAEIMRSLSLSTNLQERL RRKE

Sequence ID 11: human interferon alpha 14 (GenBank 4504591)

MALPFALMMALVVLSCKSSCSLGCNLSQTHSLNNRRTLMLMAQMRRISPFSCLKDRHDFE FPQEEFDGNQFQKAQAISVLHEMMQQTFNLFSTKNSSAAWDETLLEKFYIELFQQMNDLEA CVIQEVGVEETPLMNEDSILAVKKYFQRITLYLMEKKYSPCAWEVVRAEIMRSFSFSTNLQK RLRRKD

Sequence ID 12: human interferon alpha 16 (GenBank 4504593)

MALSFSLLMAVLVLSYKSICSLGCDLPQTHSLGNRRALILLAQMGRISHFSCLKDRYDFGFP QEVFDGNQFQKAQAISAFHEMIQQTFNLFSTKDSSAAWDETLLDKFYIELFQQLNDLEACVT QEVGVEEIALMNEDSILAVRKYFQRITLYLMGKKYSPCAWEVVRAEIMRSFSFSTNLQKGLR RKD

Sequence ID 13: human interferon alpha 17 (GenBank 10880985)

MALSFSLLMAVLVLSYKSICSLGCDLPQTHSLGNRRALILLAQMGRISPFSCLKDRHDFGLP QEEFDGNQFQKTQAISVLHEMIQQTFNLFSTEDSSAAWEQSLLEKFSTELYQQLNNLEACVI QEVGMEETPLMNEDSILAVRKYFQRITLYLTEKKYSPCAWEVVRAEIMRSLSFSTNLQKILR RKD

Sequence ID 14: human interferon alpha 21 (4504595)

MALSFSLLMAVLVLSYKSICSLGCDLPQTHSLGNRRALILLAQMGRISPFSCLKDRHDFGFP QEEFDGNQFQKAQAISVLHEMIQQTFNLFSTKDSSATWEQSLLEKFSTELNQQLNDMEACV IQEVGVEETPLMNVDSILAVKKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSKIFQERLR RKE

Sequence ID 15: human interferon beta (GenBank 124469), signal peptide deleted MSYNLLGFLQRSSNFQCQKLLWQLNGRLEYCLKDRMNFDIPEEIKQLQQFQKEDAALTIYE MLQNIFAIFRQDSSSTGWNETIVENLLANVYHQINHLKTVLEEKLEKEDFTRGKLMSSLHLKR YYGRILHYLKAKEYSHCAWTIVRVEILRNFYFINRLTGYLRN

Sequence ID 16: human interferon kappa (GenBank 14488028)

MSTKPDMIQKCLWLEILMGIFIAGTLSLDCNLLNVHLRRVTWQNLRHLSSMSNSFPVECLRE NIAFELPQEFLQYTQPMKRDIKKAFYEMSLQAFNIFSQHTFKYWKERHLKQIQIGLDQQAEY

LNQCLEEDENENEDMKEMKENEMKPSEARVPQLSSLELRRYFHRIDNFLKEKKYSDCAWEI VRVEIRRCLYYFYKFTALFRRK

Sequence ID 17: human interferon tau (GenBank 28882045)

MIIKHFFGTVLVLLASTTIFSLDLKLIIFQQRQVNQESLKLLNKLQTLSIQQCLPHRKNFLLPQK SLSPQQYQKGHTLAILHEMLQQIFSLFRANISLDGWEENHTEKFLIQLHQQLEYLEALMGLE AEKLSGTLGSDNLRLQVKMYFRRIHDYLENQDYSTCAWAIVQVEISRCLFFVFSLTEKLSKQ GRPLNDMKQELTTEFRSPR

Sequence ID 18: human interferon omega (GenBank 4504605)

MALLFPLLAALVMTSYSPVGSLGCDLPQNHGLLSRNTLVLLHQMRRISPFLCLKDRRDFRFP QEMVKGSQLQKAHVMSVLHEMLQQIFSLFHTERSSAAWNMTLLDQLHTGLHQQLQHLETC LLQVVGEGESAGAISSPALTLRRYFQGIRVYLKEKKYSDCAWEVVRMEIMKSLFLSTNMQE RLRSKDRDLGSS

Sequence ID 19: interferon beta variant #2 L5Q in C17S background MSYNQLGFLQRSSNFQSQKLLWQLNGRLEYCLKDRMNFDIPEEIKQLQQFQKEDAALTIYE MLQNIFAIFRQDSSSTGWNETIVENLLANVYHQINHLKTVLEEKLEKEDFTRGKLMSSLHLKR YYGRILHYLKAKEYSHCAWTIVRVEILRNFYFINRLTGYLRN

Sequence ID 20: interferon beta variant #7 L5Q/F8E in C17S background MSYNQLGELQRSSNFQSQKLLWQLNGRLEYCLKDRMNFDIPEEIKQLQQFQKEDAALTIYE MLQNIFAIFRQDSSSTGWNETIVENLLANVYHQINHLKTVLEEKLEKEDFTRGKLMSSLHLKR YYGRILHYLKAKEYSHCAWTIVRVEILRNFYFINRLTGYLRN

Sequence ID 21: interferon beta variant #15 L5Q/F8E/F111N in C17S background MSYNQLGELQRSSNFQSQKLLWQLNGRLEYCLKDRMNFDIPEEIKQLQQFQKEDAALTIYE MLQNIFAIFRQDSSSTGWNETIVENLLANVYHQINHLKTVLEEKLEKEDNTRGKLMSSLHLK RYYGRILHYLKAKEYSHCAWTIVRVEILRNFYFINRLTGYLRN

Sequence ID 22: interferon beta variant #23 L5Q/F8E/L116E in C17S background MSYNQLGELQRSSNFQSQKLLWQLNGRLEYCLKDRMNFDIPEEIKQLQQFQKEDAALTIYE MLQNIFAIFRQDSSSTGWNETIVENLLANVYHQINHLKTVLEEKLEKEDFTRGKEMSSLHLK RYYGRILHYLKAKEYSHCAWTIVRVEILRNFYFINRLTGYLRN

Sequence ID 23: interferon beta variant #36 F8E/F111N/L116E in C17S background MSYNLLGELQRSSNFQSQKLLWQLNGRLEYCLKDRMNFDIPEEIKQLQQFQKEDAALTIYE MLQNIFAIFRQDSSSTGWNETIVENLLANVYHQINHLKTVLEEKLEKEDNTRGKEMSSLHLK RYYGRILHYLKAKEYSHCAWTIVRVEILRNFYFINRLTGYLRN

Sequence ID 24: interferon beta variant #39 L5Q/F8E/F111N/L116E in C17S background MSYNQLGELQRSSNFQSQKLLWQLNGRLEYCLKDRMNFDIPEEIKQLQQFQKEDAALTIYE MLQNIFAIFRQDSSSTGWNETIVENLLANVYHQINHLKTVLEEKLEKEDNTRGKEMSSLHLK RYYGRILHYLKAKEYSHCAWTIVRVEILRNFYFINRLTGYLRN

Sequence ID 25: interferon beta variant #64 L5Q/F8E/L47K/F111N/L116E/L120R in C17S background

MSYNQLGELQRSSNFQSQKLLWQLNGRLEYCLKDRMNFDIPEEIKQKQQFQKEDAALTIYE MLQNIFAIFRQDSSSTGWNETIVENLLANVYHQINHLKTVLEEKLEKEDNTRGKEMSSRHLK RYYGRILHYLKAKEYSHCAWTIVRVEI LRNFYFINRLTGYLRN

Sequence ID 26: interferon kappa variant #4_G7 V8N/W15R/Y48Q/M52N/F76S/Y78A/I89T LDCNLLNNHLRRVTRQNLRHLSSMSNSFPVECLRENIAFELPQEFLQQTQPNKRDIKKAFYE MSLQAFNIFSQHTSKAWKERHLKQIQTGLDQQAEYLNQCLEEDENENEDMKEMKENEMKP SEARVPQLSSLELRRYFHRIDNFLKEKKYSDCAWEIVRVEIRRCLYYFYKFTALFRRK

Sequence ID 27: interferon kappa variant #46_E2 W15R/I37N/Y48Q/M52N/F76S/Y78A/I89T/ Y97D/V161A/C166A/Y168S/Y171T LDCNLLNVHLRRVTRQNLRHLSSMSNSFPVECLRENNAFELPQEFLQQTQPNKRDIKKAFY EMSLQAFNIFSQHTSKAWKERHLKQIQTGLDQQAEDLNQCLEEDENENEDMKEMKENEMK PSEARVPQLSSLELRRYFHRIDNFLKEKKYSDCAWEIVRAEIRRALSYFTKFTALFRRK

Sequence ID 28: interferon kappa variant #47_C4 W15R/F76S/Y78A LDCNLLNVHLRRVTRQNLRHLSSMSNSFPVECLRENIAFELPQEFLQYTQPMKRDIKKAFYE MSLQAFNIFSQHTSKAWKERHLKQIQIGLDQQAEYLNQCLEEDENENEDMKEMKENEMKP SEARVPQLSSLELRRYFHRIDNFLKEKKYSDCAWEIVRVEIRRCLYYFYKFTALFRRK

Sequence ID 29: interferon kappa variant #23_C10 I37N/Y48Q/M52N/F76S/Y78A/Y97D LDCNLLNVHLRRVTWQNLRHLSSMSNSFPVECLRENNAFELPQEFLQQTQPNKRDIKKAFY EMSLQAFNIFSQHTSKAWKERHLKQIQIGLDQQAEDLNQCLEEDENENEDMKEMKENEMK PSEARVPQLSSLELRRYFHRIDNFLKEKKYSDCAWEIVRVEIRRCLYYFYKFTALFRRK

Sequence ID 30: interferon kappa variant #40_A10 W15R/I37N/F76S/Y78A LDCNLLNVHLRRVTRQNLRHLSSMSNSFPVECLRENNAFELPQEFLQYTQPMKRDIKKAFY EMSLQAFNIFSQHTSKAWKERHLKQIQIGLDQQAEYLNQCLEEDENENEDMKEMKENEMK PSEARVPQLSSLELRRYFHRIDNFLKEKKYSDCAWEIVRVEIRRCLYYFYKFTALFRRK

Figure 2 CDLPETHSLDNRRTLMLLAQMSRISPSSCLMDRHDFGFPQEEFDGNQFQKAPAISVLHEL 83 3(2a: 2 CDLPQTHSLGSRRTLMLLAQMRKISLFSCLKDRHDFGFPQEEF-GNOFQKAETIPVLHEM 60 37 2b: 2 CDLPQTHSLGSRRTLMLLAQMRRISLFSCLKDRHDFGFPQEEF-GNQFQKAETIPVLHEM 60 33 4: 24 CDLPQTHSLGNRRALILLAQMGRISHFSCLKDRHDFGFPEEEFDGHQFQKAQAISVLHEM 83 5: 24 CDLPQTHSLSNRRTLMIMAQMGRISPFSCLKDRHDFGFPQEEFDGNQFQKAQAISVLHEM 83 34 6: 24 CDLPQTHSLGHRRTMMLLAQMRRISLFSCLKDRHDFRFPQEEFDGNQFQKAEAISVLHEV 83 CDLPQTHSLRNRRALILLAQMGRISPFSCLKDRHEFRFPEEEFDGHQFQKTQAISVLHEM 83 7: 24 37-8:24 CDLPQTHSLGNRRALILLAQMRRISPFSCLKDRHDFEFPQEEFDDKQFQKAQAISVLHEM 83 38 10: 24 CDLPQTHSLGNRRALILLGQMGRISPFSCLKDRHDFRIPQEEFDGNQFQKAQAISVLHEM 83 CDLPETHSLDNRRTLMLLAQMSRISPSSCLMDRHDFGFPQEEFDGNQFQKAPAISVLHEL 83 29 13: 24 4014: 24 CNLSQTHSLNNRRTLMLMAQMRRISPFSCLKDRHDFEFPQEEFDGNQFQKAQAISVLHEM 83 **∮**| 16: 24 CDLPQTHSLGNRRALILLAQMGRISHFSCLKDRYDFGFPQEVFDGNQFQKAQAISAFHEM 83 WZ 17: 24 CDLPQTHSLGNRRALILLAQMGRISPFSCLKDRHDFGLPQEEFDGNQFQKTQAISVLHEM 83 ψ3 21: 24 CDLPQTHSLGNRRALILLAQMGRISPFSCLKDRHDFGFPQEEFDGNQFQKAQAISVLHEM 83 1: 84 IQQIFNLFTTKDSSAAWDEDLLDKFCTELYQQLNDLEACVMQEERVGETPLMNADSILAV 143 2a: 61 IQQIFNLFSTKDSSAAWDETLLDKFYTELYOOLNDLEACVIOGVGVTETPLMKEDSILAV 120 2b: 61 IQQIFNLFSTKDSSAAWDETLLDKFYTELYQQLNDLEACVIQGVGVTETPLMKEDSILAV 120 4: 84 IQQTFNLFSTEDSSAAWEQSLLEKFSTELYQOLNDLEACVIOEVGVEETPLMNEDSILAV 143 5: 84 IQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLEACMMQEVGVEDTPLMNVDSILTV 143 6: 84 IQQTFNLFSTKDSSVAWDERLLDKLYTELYQQLNDLEACVMQEVWVGGTPLMNEDSILAV 143 7: 84 IQQTFNLFSTEDSSAAWEQSLLEKFSTELYOOLNDLEACVIOEVGVEETPLMNEDFILAV 143 8: 84 IQQTFNLFSTKDSSAALDETLLDEFYIELDOOLNDLEVLCDOEVGVIESPLMYEDSILAV 143 10: 84 IQQTFNLFSTEDSSAAWEQSLLEKFSTELYQQLNDLEACVIQEVGVEETPLMNEDSILAV 143 13 - 84 IQQIFNLFTTKDSSAAWDEDLLDKFCTELYQQLNDLEACVMQEERVGETPLMNADSILAV 143 14: 84 MQQTFNLFSTKNSSAAWDETLLEKFYIELFOOMNDLEACVIOEVGVEETPLMNEDSILAV 143 16: 84 IQQTFNLFSTKDSSAAWDETLLDKFYIELFQQLNDLEACVTQEVGVEEIALMNEDSILAV 143 17: 84 IQQTFNLFSTEDSSAAWEQSLLEKFSTELYQQLNNLEACVIOEVGMEETPLMNEDSILAV 143 21: 84 IQQTFNLFSTKDSSATWEQSLLEKFSTELNQQLNDMEACVIQEVGVEETPLMNVDSILAV 143 1: 144 KKYFRRITLYLTEKKYSPCAWEVVRAEIMRSLSLSTNLQERLRRKE 189 2a: 121 RKYFQRITLYLKEKKYSPCAWEVVRAEIMRSFSLSTNLOESLRSKE 166 2b: 121 RKYFQRITLYLKEKKYSPCAWEVVRAEIMRSFSLSTNLOESLRSKE 166 4: 144 RKYFQRITLYLTEKKYSPCAWEVVRAEIMRSLSFSTNLQKRLRRKD 189 5: 144 RKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSANLOERLRRKE 189 6: 144 RKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSSSRNLOERLRRKE 189 7: 144 RKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSFSTNLKKGLRRKD 189 8: 144 RKYFQRITLYLTEKKYSSCAWEVVRAEIMRSFSLSINLOKRLKSKE 189 10: 144 RKYFQRITLYLIERKYSPCAWEVVRAEIMRSLSFSTNLQKRLRRKD 189 13: 144 KKYFRRITLYLTEKKYSPCAWEVVRAEIMRSLSLSTNLQERLRRKE 189 14: 144 KKYFQRITLYLMEKKYSPCAWEVVRAEIMRSFSFSTNLQKRLRRKD 189 16: 144 RKYFQRITLYLMGKKYSPCAWEVVRAEIMRSFSFSTNLQKGLRRKD 189 17: 144 RKYFQRITLYLTEKKYSPCAWEVVRAEIMRSLSFSTNLQKILRRKD 189

21: 144 KKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSKIFQERLRRKE 189

Figure 3

146		
44	IFNK:	${\tt ldcnllnvhlrrvtwqnlrhlssmsnsfpveclreniafelpqeflqytq}$
45	1AU1:	MSYNLLGFLQRSSNFQCQKLLWQLNGRLEY-CLKDRMNFDIPEEIKQLQQ
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47	1ITF:	CDLPQTHSLGSR-RTLMLLAQMRKISLFSCLKDRHDFGFPQE-EFGNQ
•		
	IFNK:	pmkrdikkafyemslqafnifsqhtfkywkerhkqiqigldqqaeyln
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	1B5L:	LQKDQAFPVLYEMLQQSFNLFYTEHSSAAWDTTLLEQLCTGLQQQLDHLD
	1ITF:	FQKAETIPVLHEMIQQIFNLFSTKDSSAAWDETLLDKFYTELYQQLNDLE
	IFNK:	qcleedenenedmkemkenemkpsearvpqlsslelrryfhridnflkek
		TVLEEKLEKEDFTRGKLMSSLHLKRYYGRILHYLKAK
	1B5L:	TCRG MDPIVTVKKYFQGIYDYLQEK
	1ITF:	ACVIQGVGVTETPLMKEDSILAVRKYFQRITLYLKEK
	IFNK:	kysdcaweivrveirrclyyfykftalfrrk
	1AU1:	EYSHCAWTIVRVEILRNFYFINRLTGYLRN
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Figure 4

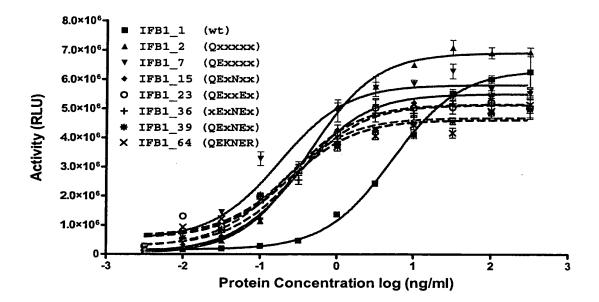


Figure 5

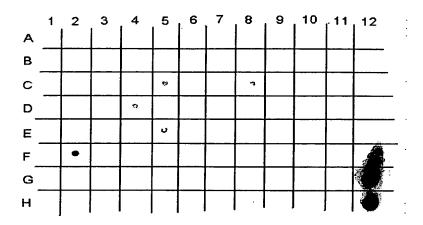
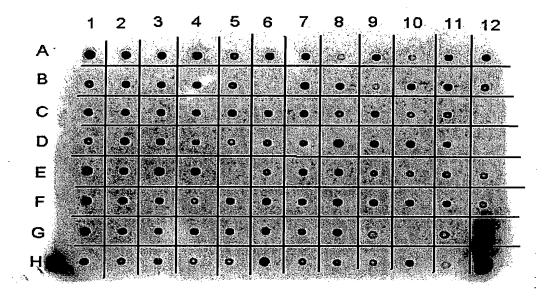


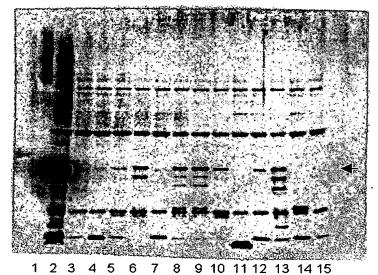
Figure 6



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Figure 7

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Figure 8

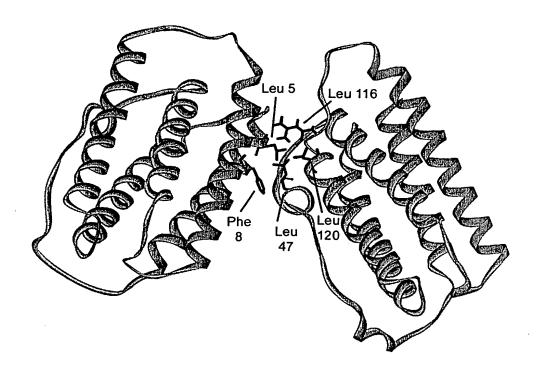
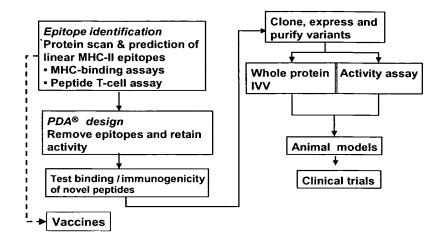
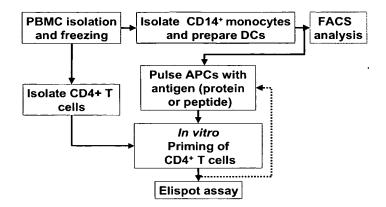


Figure 2, 9



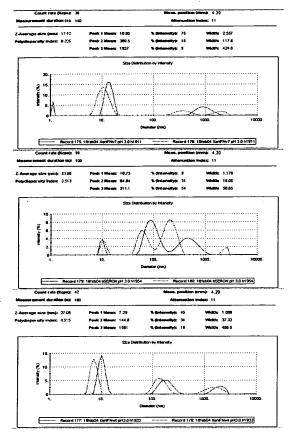
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Figure 8, 10



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Figure # 1



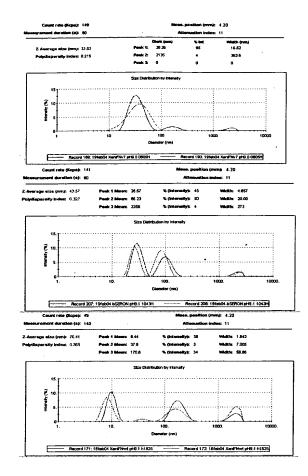


Figure 100 12